SURFLANT Pro-active Maintenance (SPaM) Group

Timothy J. Lyke
SUPSHIP Portsmouth, Code 225
(757) 396-3996
LykeTJ@SUPSHIP.NAVY.MIL

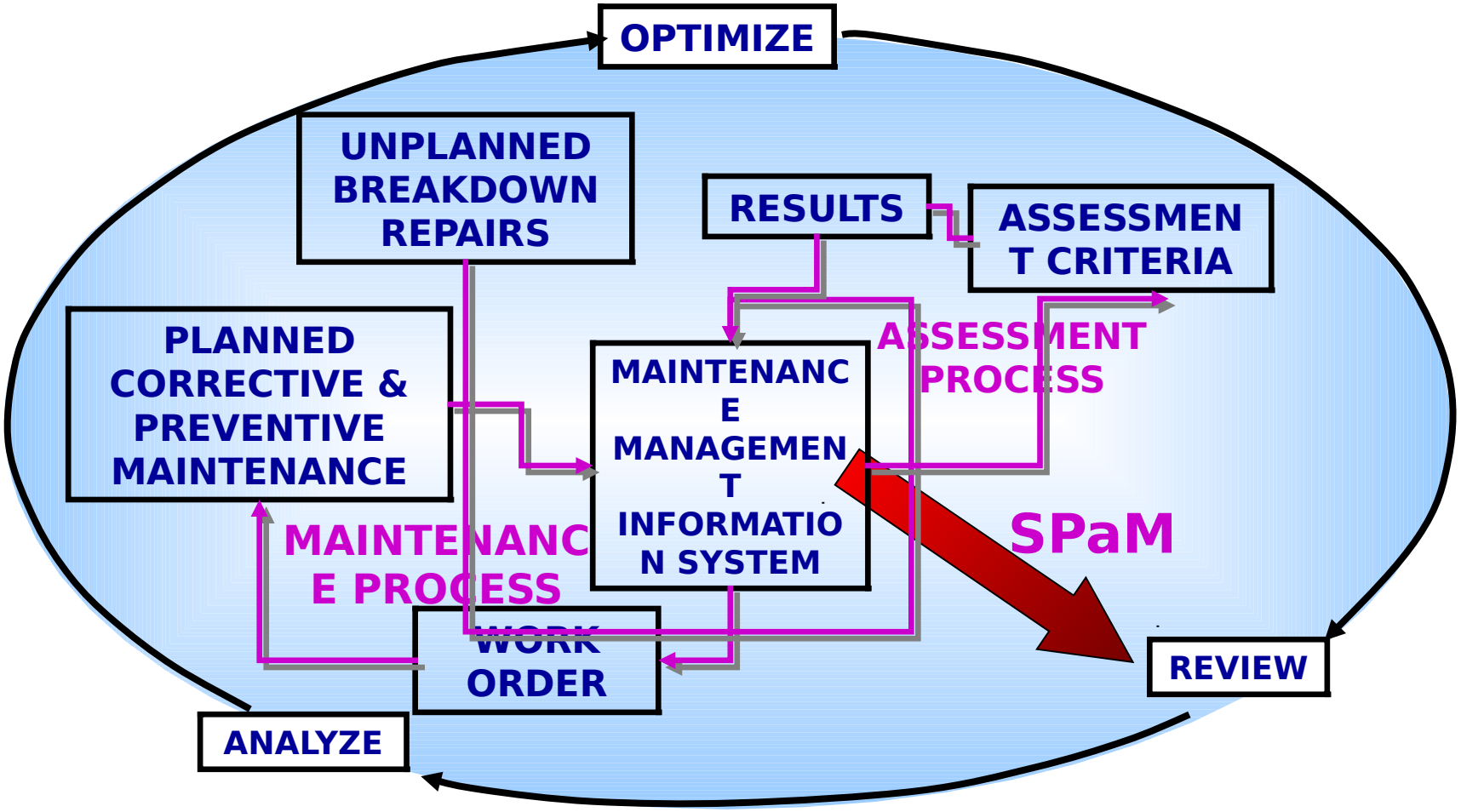
NAVSEA
PORTSMOUTH
Supervisor of Shipbuilding

Today's Agenda

- **What is SPaM?**
- **Proactive Maintenance Initiatives**
- **Condition Based Dry-Docking Process**
- **SPaM Challenges**

NAVSEA
PORTSMOUTH
Supervisor of Shipbuilding

CNSL Continuous Maintenance Process



NAVSEA
PORTSMOUTH
Supervisor of Shipbuilding

SPaM FUNDAMENTALS

An 8 Step Process

- **Reliability-Centered Maintenance (RCM)**
- **Total Productive Maintenance (TPM)**
- **Holistic - Addresses the Entire Maintenance Process**
- **Engineering Based - Technically Founded on Maintenance/Logistics Engineering Principles**

Systematically

- **Solve Predominant, Recurring Failures or Cost-Drivers**

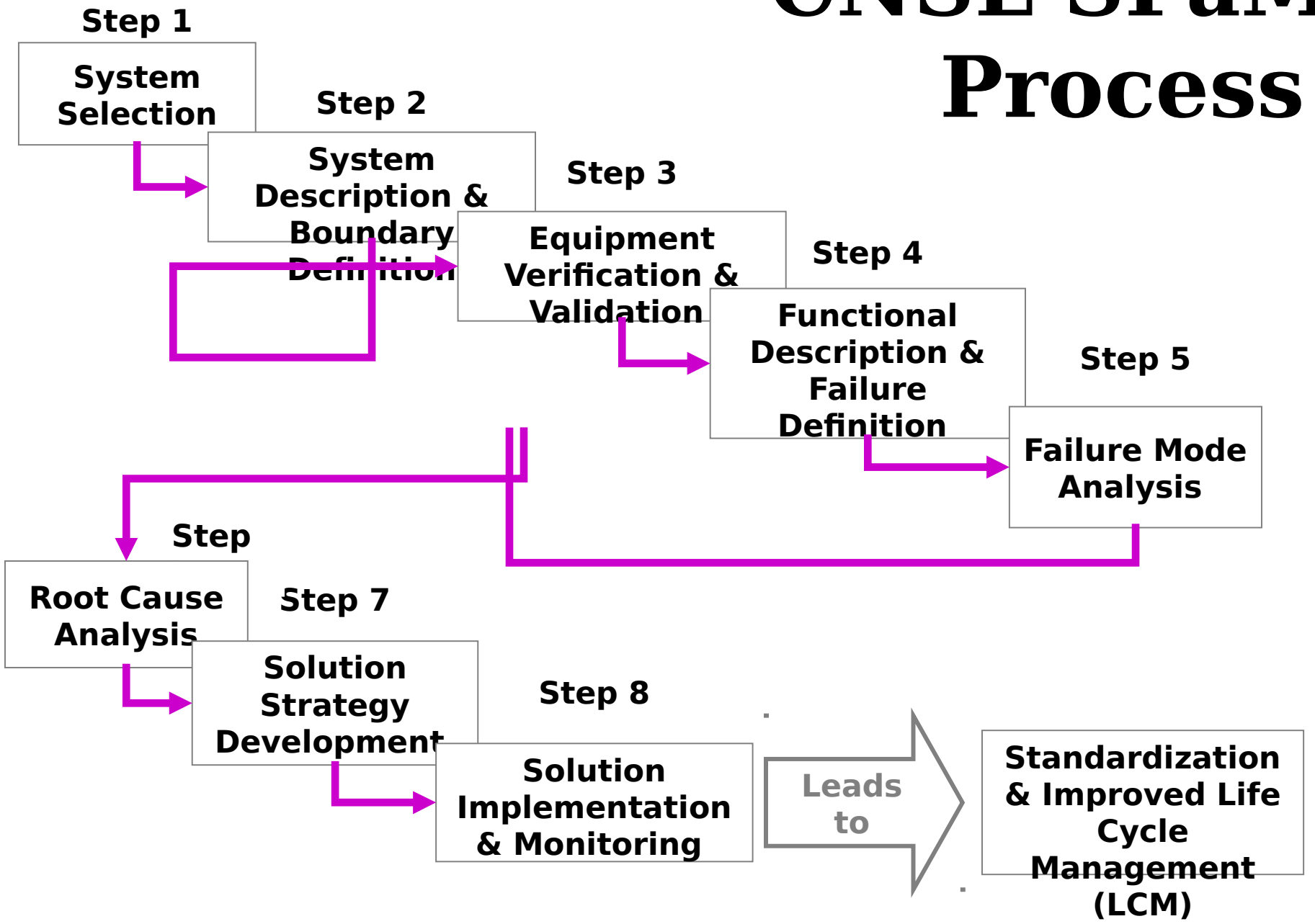
SPaM FUNDAMENTALS

Goals

- **Maintain / Improve Readiness - Effectiveness**
- **Decrease Cost - Improve Efficiency**

LEVERAGES TMA/TMI, SURFMER, ERM, CWP

CNSL SPaM Process



Why is SPaM Done? Maintenance Policy Background

Prior to 1992

- OPAVINST 4700.7H of 30 October 1987 established the Ship Maintenance Policy is to be based on periodic maintenance IAW a Class Maintenance Plan (CMP).

Why is SPaM Done? Maintenance Policy Background

After 1992

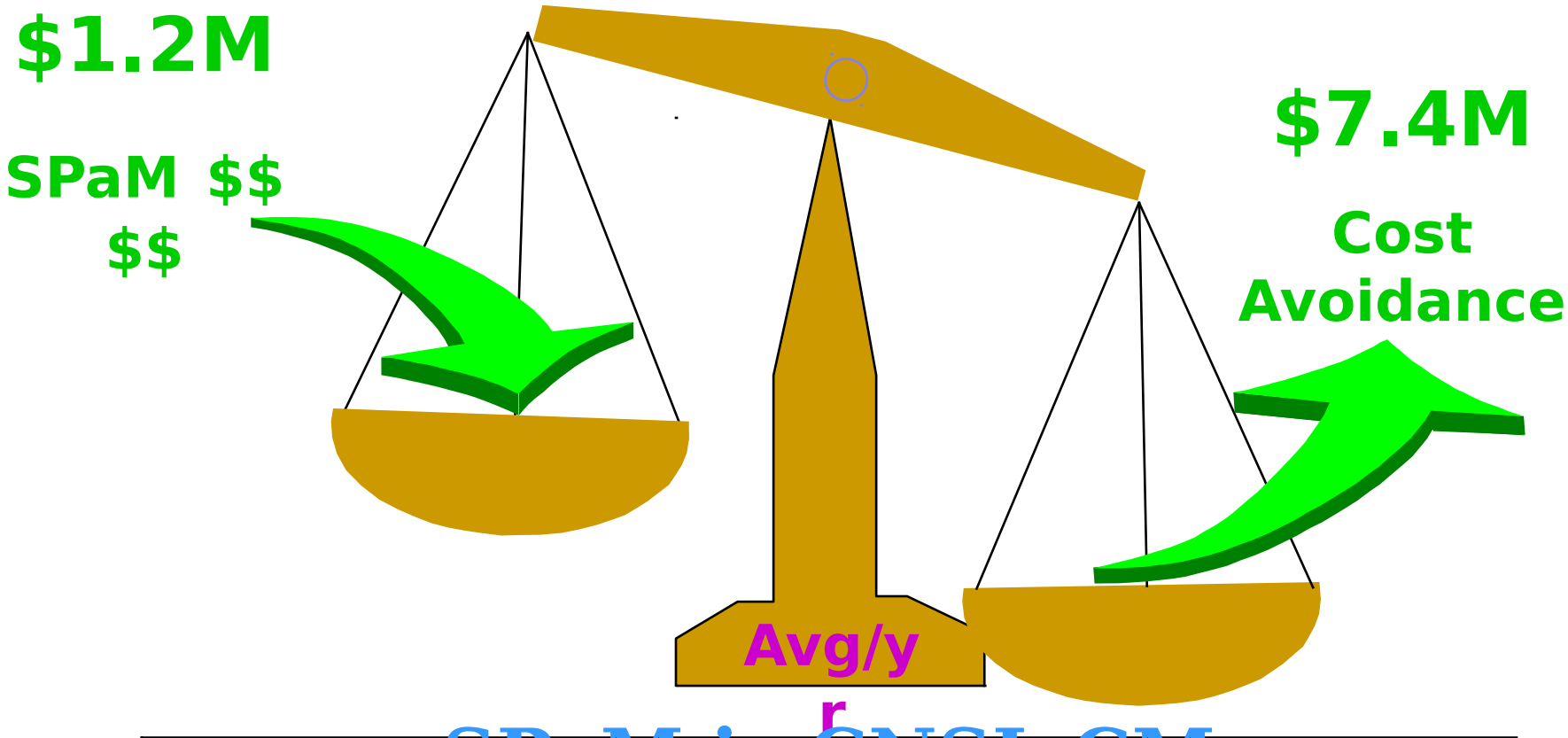
- OPNAVINST 4700.7J of 4 December 1992 established:

Condition Based Maintenance (CBM) - "…Ship Maintenance Policy is to be based on Condition Based Maintenance (CBM) Diagnostics, Inspections and Tests to the maximum extent possible…"

Reliability-Centered Maintenance - "Maintenance plans for in-service ships, systems, and equipment should be reviewed and modified to incorporate RCM principles in areas where it can be determined that expected results will be commensurate with associated costs."

Managing $$$ and Risk using CBM

Why CNSL $$ to do SPaM??

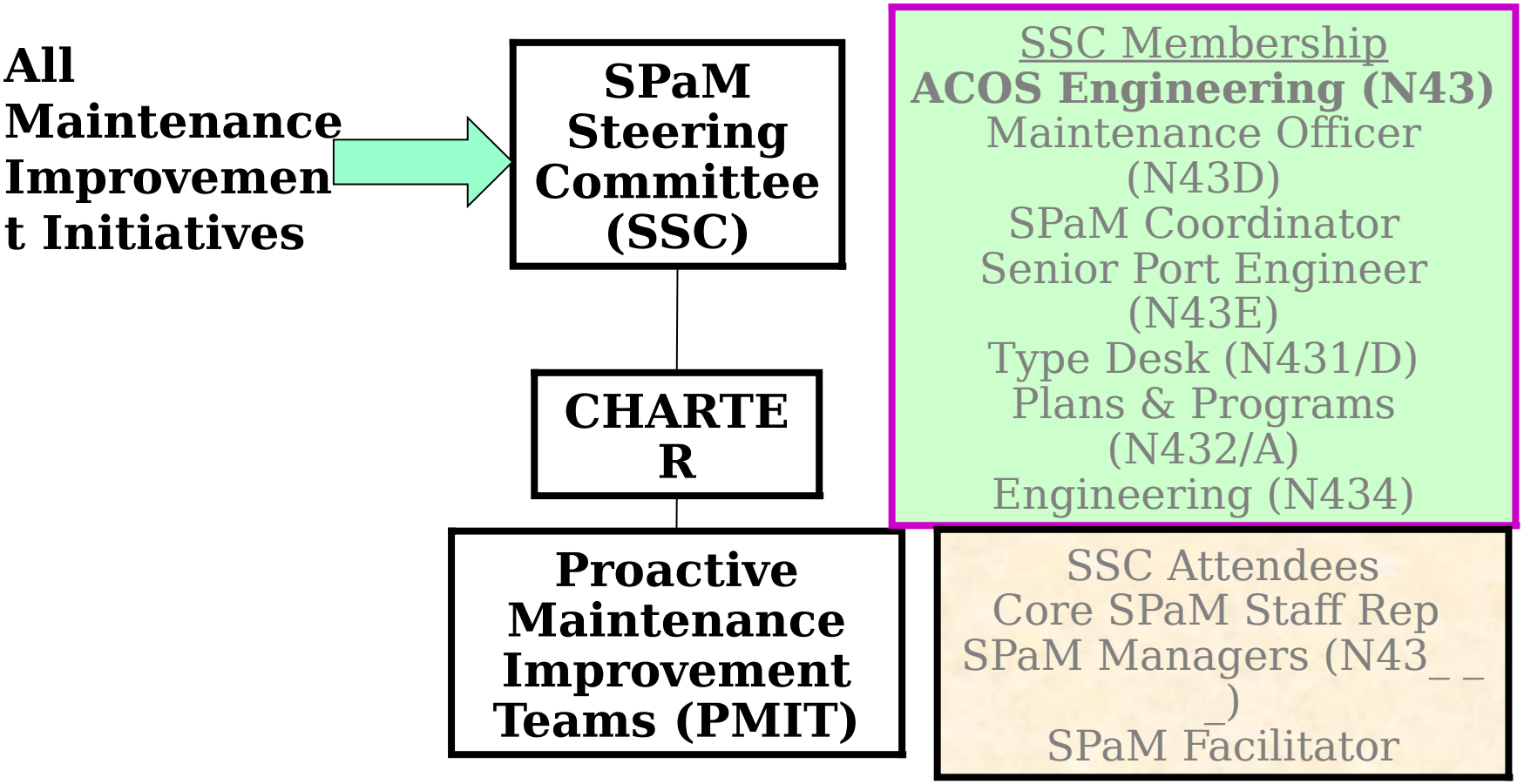


SPaM is CNSL CM Improvement Tool

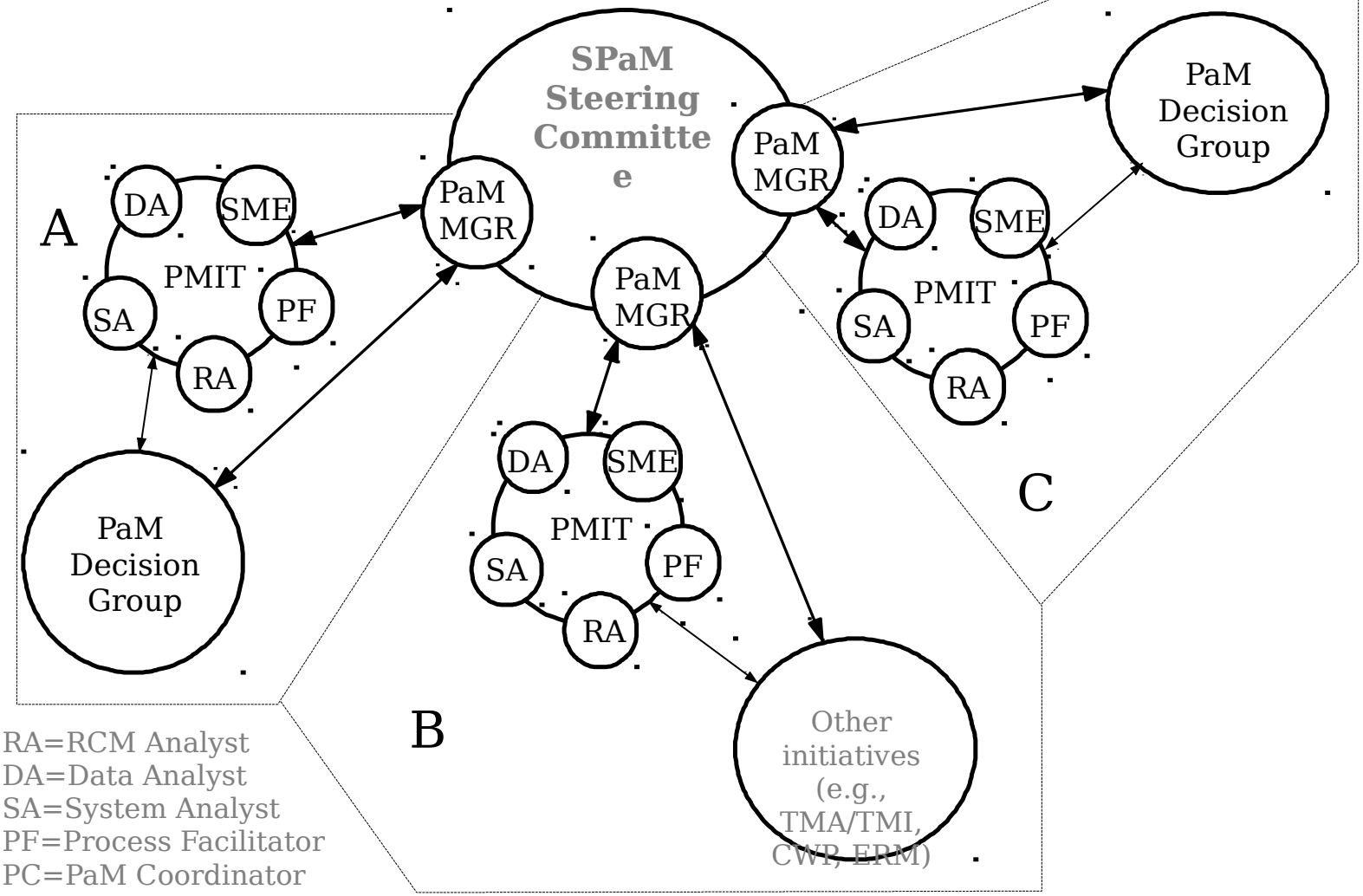
Principles from CNO Maintenance Policy

- ***CSMP*** is the primary repository of ship material condition information.
- Emphasize accomplishment on a ***continuous basis.***
- Emphasize ***condition-based*** maintenance.
- Perform maintenance at ***lowest echelon possible.***
- Emphasize self-sufficiency.
- Minimize depot maintenance.
- Promote one way of doing business.

SPaM Organization Overview



SPaM Organization Details



RA=RCM Analyst
DA=Data Analyst
SA=System Analyst
PF=Process Facilitator
PC=PaM Coordinator
SME=Subject Matter Expert

Proactive Maintenance Improvements Initiatives

NAVSEA PORTSMOUTH
Supervisor of Shipbuilding

- **Completed Initiatives**
  - **Underwater Hull/Dry Dock Driver Systems**
  - **Tanks and Voids**
  - **Firemain**
  - **Diesel Engines**
  - **Watertight Doors**
  - **U/W Hull Structure**
  - **Galley/Scullery**
  - **Topside Paint**
  - **Deck Coatings and Coverings**

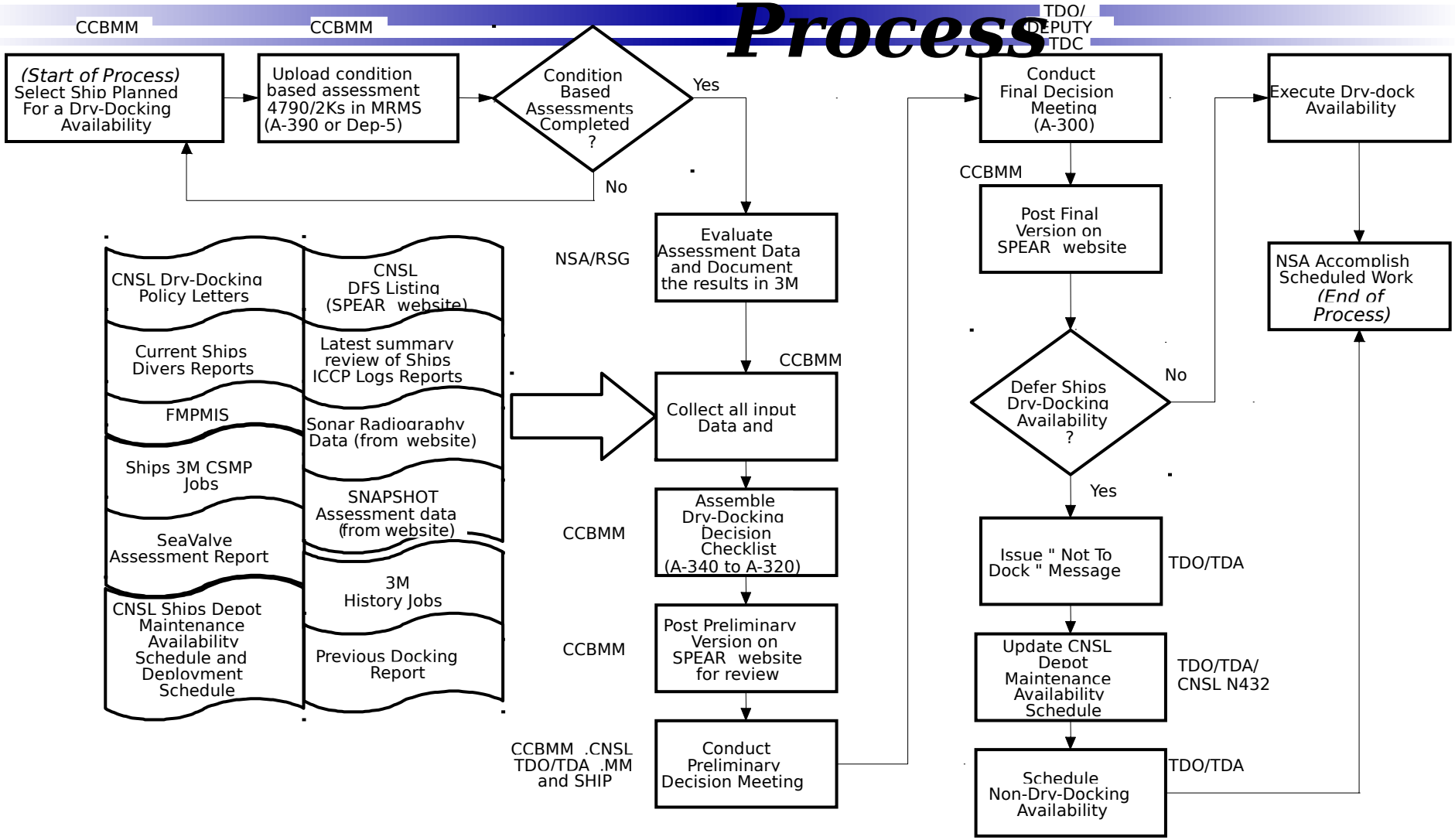
- **In-Progress**
  - **LP/MP Air Systems**

Underwater Hull Condition Based Dry-Docking Process

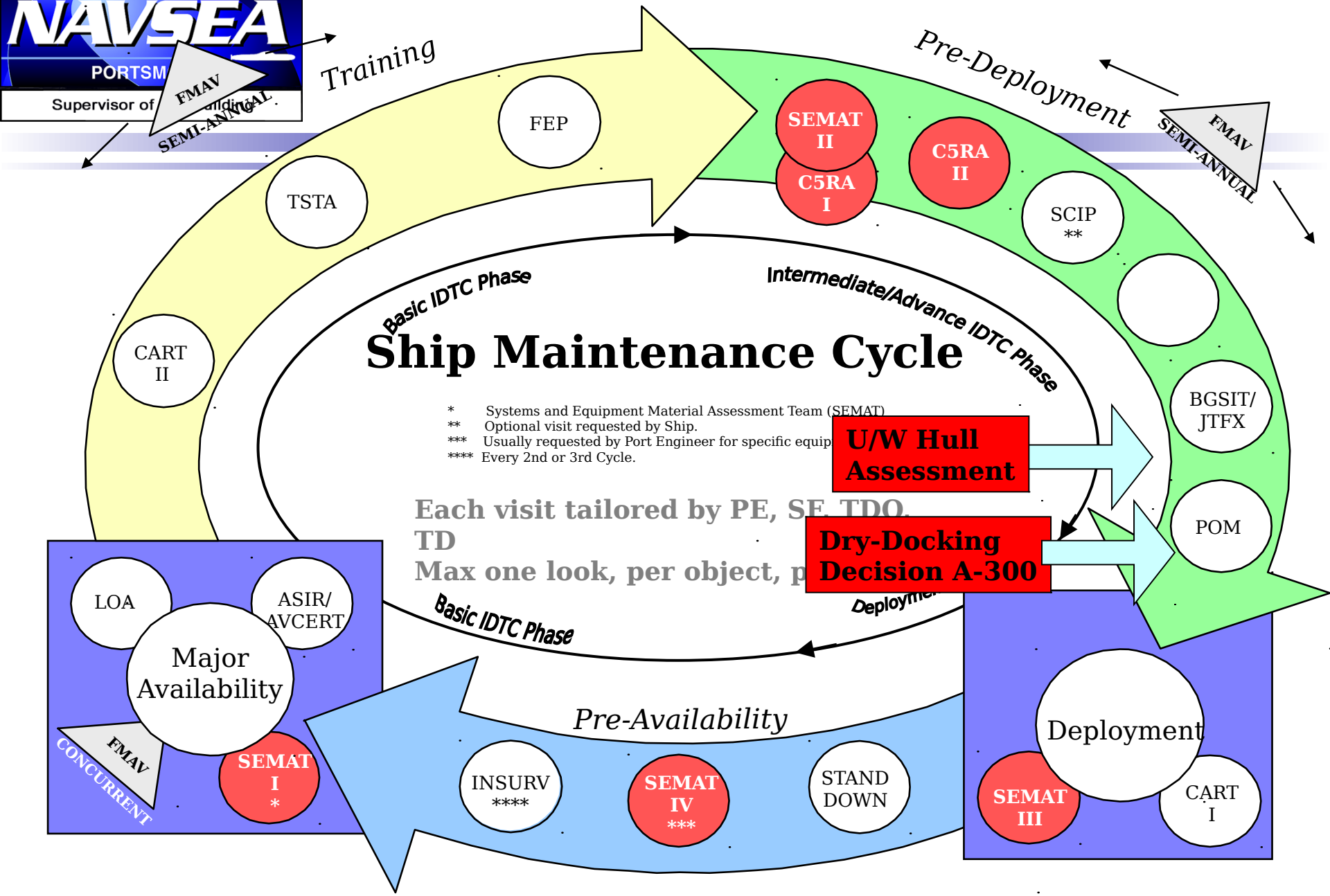
- **Systems**
  - Underwater Hull Protrusions
  - Sea Valves
  - Sea Chests and Waster Sleeves
  - SONAR Dome
  - Cathodic Protection
  - Propulsion Shafting/Air
  - Tanks/Voids
  - Underwater Hull Paint
  - U/W Hull Structure

NAVSEA PORTSMOUTH
Supervisor of Shipbuilding

What is the Process?
Dry-docking Decision Process


CCBMM
CCBMM
TDO/ DEPUTY TDC
(Start of Process) Select Ship Planned For a Dry-Docking Availability
Upload condition based assessment 4790/2Ks in MRMS (A-390 or Dep-5)
Condition Based Assessments Completed ?
Yes
No
CNSL Dry-Docking Policy Letters
CNSL DFS Listing (SPEAR website)
Current Ships Divers Reports
Latest summary review of Ships ICCP Logs Reports
FMPMIS
Sonar Radiography Data (from website)
Ships 3M CSMP Jobs
SNAPSHOT Assessment data (from website)
SeaValve Assessment Report
3M History Jobs
CNSL Ships Depot Maintenance Availability Schedule and Deployment Schedule
Previous Docking Report
NSA/RSG
Evaluate Assessment Data and Document the results in 3M
CCBMM
Collect all input Data and
CCBMM
Assemble Dry-Docking Decision Checklist (A-340 to A-320)
CCBMM
Post Preliminary Version on SPEAR website for review
CCBMM .CNSL TDO/TDA .MM and SHIP
Conduct Preliminary Decision Meeting
Conduct Final Decision Meeting (A-300)
CCBMM
Post Final Version on SPEAR website
Defer Ships Dry-Docking Availability ?
No
Yes
Issue " Not To Dock " Message
TDO/TDA
Update CNSL Depot Maintenance Availability Schedule
TDO/TDA/ CNSL N432
Schedule Non-Dry-Docking Availability
TDO/TDA
Execute Dry-dock Availability
NSA Accomplish Scheduled Work (End of Process)

When is Dry-Docking Decision mad



NAVSEA PORTSMOUTH
Supervisor of Shipbuilding

Results to Date
Number of Deferrals

Year	Scheduled Dockings	Deferred	Dock
1996	15	2	13
1997	13	2	11
1998	21	10	11
1999	30	18	12
2000	22	12	10
2001	26	13	13
Total	127	57	70

Deferred Dry-Dockings:

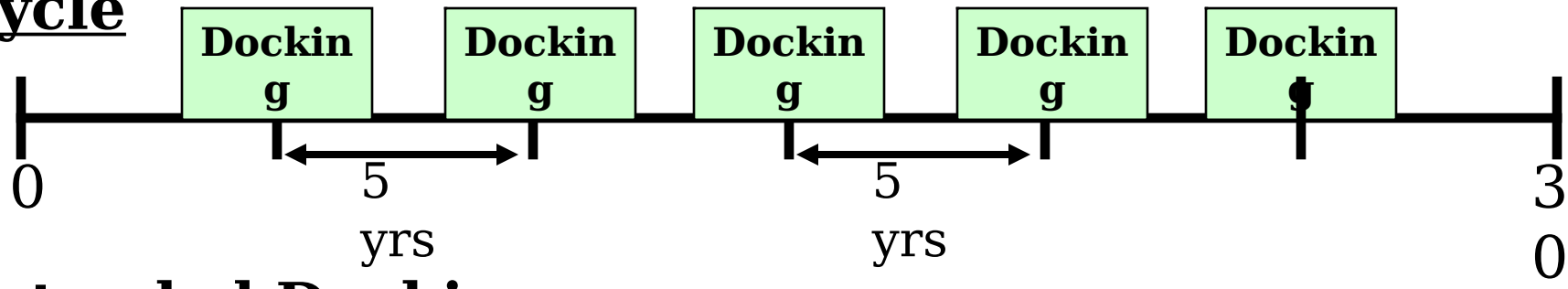
50 of 120 at least one cycle
7 of 50 at least two cycles
0 of 0 at least three cycles
57 Deferrals to date

Estimated Cost Savings:

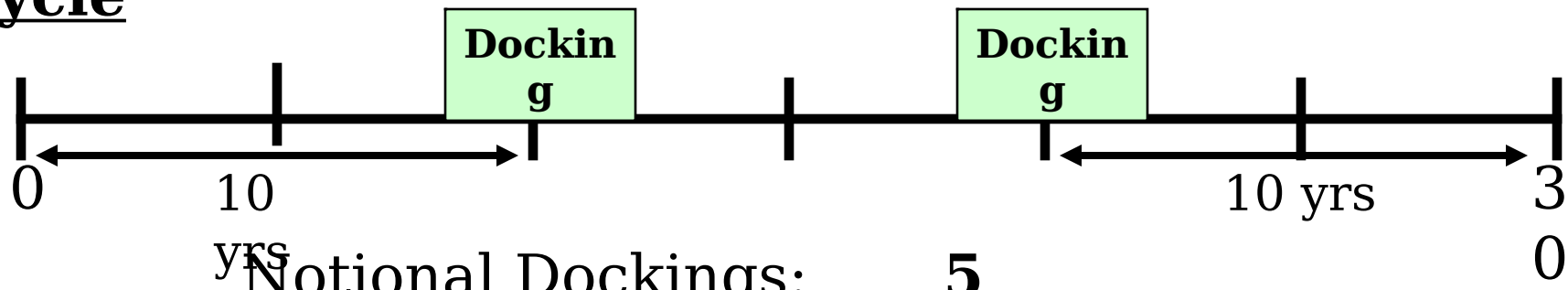
$23,743,664 FY96-01

Life Cycle Savings Fewer Dockings

Notional Docking Cycle



Extended Docking Cycle



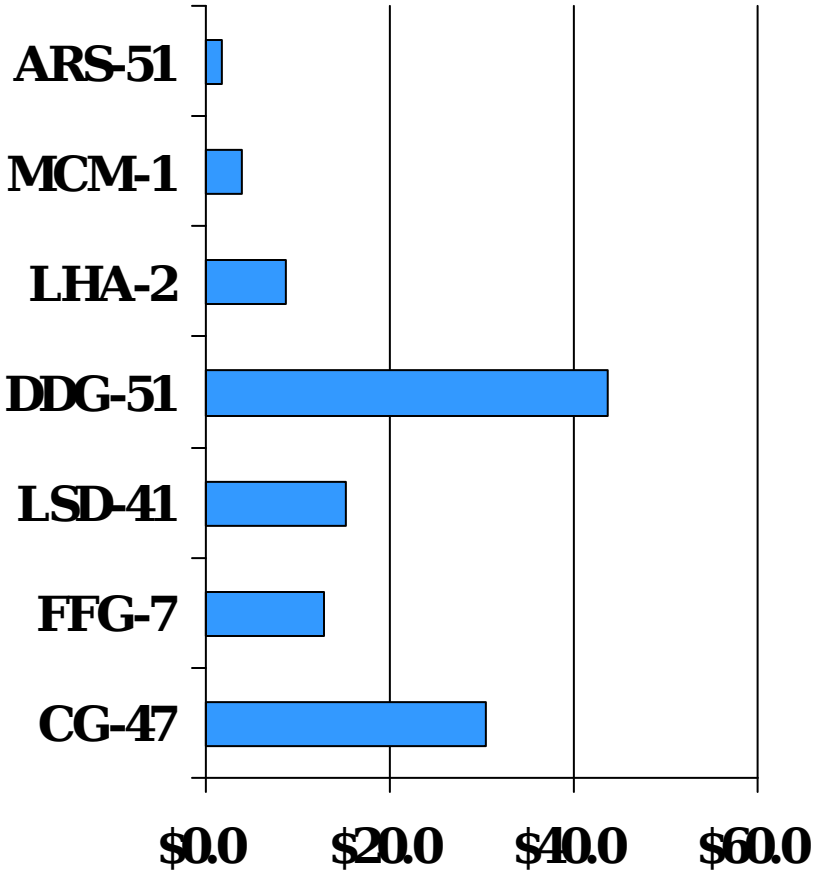
Notional Dockings: **5**

Extended Docking Interval: **2**

Dockings Saved:

NAVSEA
PORTSMOUTH
Supervisor of Shipbuilding

Life Cycle Savings Projected



Extended Docking Intervals

- CG-47 $30.5 M - 10yrs Intv
- FFG-7 $12.8 M - 10yrs Intv
- LSD-41 $15.2 M - 10yrs Intv
- DDG51 $43.6 M - 10yrs Intv
- LHA-2 $8.8 M - 10yrs Intv
- MCM-1 $4.0 M - 8yrs Intv
- ARS-51 $1.8 M - 6yrs Intv

– Approx $110 M Total

Condition Based Drydocking Bottom Line

- **GOAL:**
  - Establish MTBM
  - Reduce Life Cycle Maintenance Costs
  - Increased Operational Availability
  - No Loss In System Reliability
  - Bonus Benefits

    Shorter Maintenance periods => Less reduction in crew proficiency

    Improved QOS

Condition Based Dry-Docking NAVSEA Approved

- SPaM working with NAVSEA's ERM and CWP helped facilitate NAVSEA's SURFACE SHIP DRY-DOCKING INTERVAL letter (Ser 05D/085 dtd 26 Dec 01) which includes Docking Determination Criteria.

ONLINE SPaM

- **SPAM WEB Page**

  http://www.spear.navy.mil/spam/spam.htm

  - **Type Desk Officers Guide** - Website

    http://www.spear.navy.mil/who/work.htm

Any Questions?

Timothy J. Lyke
SUPSHIP Portsmouth, Code 225
(757) 396-3996 Voice
(757) 636-1752 Cell
DSN 961-3996
(757) 396-4055 Fax
Email: LykeTJ@SUPSHIP.NAVY.MIL